RECEIVED
CENTRAL FAX CENTER

MAY 17 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application

Inventor	:	Tjia
Application No.	:	10/517,513
Filed	:	12/09/2004
For	:	BUS SYSTEM, STATION FOR USE IN A BUS SYSTEM, AND BUS INTERFACE

APPEAL BRIEF

On Appeal from Group Art Unit 2111

Date: 05/17/2007

By: Michael Ure
Attorney for Applicant
Registration No. 33,089

Certificate of Fax/Mailing Under 37 CFR 1.8

I hereby certify that this correspondence is being faxed to (571)273-8300 or deposited with the United States Postal Service as first class mail in an envelope addressed to the COMMISSIONER FOR PATENTS, Mail Stop Appeal, P.O. BOX 1450 ALEXANDRIA, VA 22313 on 05/17/2007.

Michael J. Ure
(Name)

M. Ure 5/17/07
(Signature and Date)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of TJIA	Atty. Docket SG02 0013 US
Serial: 10/517,513	Group Art Unit: 2111
Filed: 12/09/2004	Examiner: PHAN, RAYMOND NGAN

BUS SYSTEM, STATION FOR USE IN A BUS SYSTEM, AND BUS INTERFACE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Charge Authorization and Extension of Time Statement

The Commissioner is hereby requested and authorized pursuant to 37 CFR §1.136(a)(3), to treat any concurrent or future reply in this application requiring a petition for extension of time for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. Please charge any additional fees which may now or in the future be required in this application, including extension of time fees, but excluding the issue fee unless explicitly requested to do so, and credit any overpayment, to Deposit Account No. 50-4019.

Respectfully submitted,

Michael J. Ure, Reg. 33,089

Dated: 5/17/2007

TABLE OF CONTENTS

TABLE OF CASES

NONE

I. REAL PARTY IN INTEREST

The real party in interest is NXP B.V., the successor in interest to the present assignee of record of the present application, Koninklijke Philips Electronics N.V., and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-21 are pending, all of which claims stand finally rejected and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

All amendments have been entered. No amendment after final rejection has been submitted.

V. SUMMARY of the CLAIMED SUBJECT MATTER

The present invention relates to a bus system, a station for use in a bus system, and a bus interface. The invention is described in relation to the well-known Universal Serial Bus

(USB). USB specifications include USB 1.1 and USB 2.0. USB 2.0 is also referred to as high-speed USB.

USB has become popular for portable devices, which are resource constrained. Market demand requires that such devices support both USB 1.1 and USB 2.0. Supporting both versions of USB becomes burdensome for a portable device.

The arrangement described in the present specification addresses this problem in part by communicating between a host processor and a controller in relation to USB 2.0 exclusively, and providing a translator such that if the ultimate device to be communicated with is a USB 1.1 device, for example, the translator performs the actual communications in accordance with USB 1.1 and communicates upstream in relation to USB 2.0. As described on page 11, lines 7-28 of the specification, communication from the translator in the direction of the processor and vice vera is non-USB communication. In the case of a request from the processor, a structure decoder (Fig. 4, 403) within the controller (402) receives the request in the form of request properties that specify the device address, device endpoint number, device speed, the number of bytes that need to be sent or received, etc. Based on this information the contoller (specifically the structure decoder) will start a request to a high-speed packet handler 405 (in the case of USB 2.0) or the translator 406 (in the case of USB 1.1), for example.

One way of viewing the arrangement described in the present specification is that, instead of a "two-engine" approach in which a processor communicates with separate enhanced (high-speed) and companion (low-speed) controllers or "engines" (Fig. 2), the processor communicates with a single high-speed controller or "engine" (Fig. 4, 402), which in turn communicates as needed with a translator 406.

Independent claims 1, 8 and 15 relate to a bus system, a bus station, and a bus interface, respectively. Each of the claims (which will be considered in reverse order) recite a controller and a translator, wherein the controller operates to generate requests in

a first request format from request properties, and further operates to transmit a request in the first format to a second station (i.e., device) upon detection of an indication that the second station is arranged to operate according to a first mode, and to forward the request to the translator upon detection of an indication that the second station is arranged to operate according to a second mode, and the translator operating to transmit the request in a second format to the second station.

The following analysis of independent claim 15 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
15. A bus interface for use in a bus system comprising	Fig. 4	Page 11, line 16 to page 12, line 23
a connection for a bus and an input for receiving request properties from a processor,	Fig. 4, 401	
said bus interface being arranged to operate according to a protocol in which said bus interface repeatedly sends requests to said connection, said protocol comprising a first mode for transferring said requests in a first request format at a first communication speed and at least a second mode for transferring said requests in a second request format at a second speed,		BACKGROUND, page 2, line 29 to page 3, line 31
characterized in that said bus interface comprises a controller and a translator, whereby said input is operable to receive request properties for requests in said first request format,	Fig. 4, 402 and 406	Page 11, line 16 to page 12, line 23, esp. page 11, lines 22-28.

said controller being operable to generate said requests in said first request format from said request properties, further being operable to transmit said requests in said first format to said connection and to forward said requests to said translator,	Fig. 4, 402 and 406	Page 11, line 16 to page 12, line 23, esp. page 11, line 29 to page 12, line 6.
and said translator being operable to transmit said requests in said second format to said connection.	Fig. 4, 402 and 406	Page 11, line 16 to page 12, line 23, esp. page 12, lines 6-23.

The following analysis of independent claim 8 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
8. A station for use in a bus system comprising a connection for a bus,	Fig. 1	Page 7, line 8 to page 9, line 3
said station being arranged to operate according to a protocol in which said station repeatedly sends requests to said connection, said protocol comprising a first mode for transferring said requests in a first request format at a first communication speed and at least a second mode for transferring said requests in a second request format at a second speed,		BACKGROUND, page 2, line 29 to page 3, line 31
characterized in that said station comprises a processor, a controller and a translator, said translator being operable to generate request properties for requests in said first request	Fig. 1: 105, 106 and 107; Fig. 4, 402 and 406	Page 7, line 8 to page 9, line 3, esp. page 8, lines 1-20; Page 11, line 16 to page 12, line 23, esp. page 11, lines 22-28

format,		
said controller being operable to generate said requests in said first request format from said request properties, further being operable to transmit said requests in said first format to said connection and to forward said request to said translator,	Fig. 4, 402 and 406	Page 11, line 16 to page 12, line 23, esp. page 11, line 29 to page 12, line 6.
and said translator being operable to transmit said requests in said second format to said connection.	Fig. 4, 402 and 406	Page 11, line 16 to page 12, line 23, esp. page 12, lines 6-23.

The following analysis of independent claim 1 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
1. A bus system comprising a first station and a second station coupled by a bus for transferring signals,	Fig. 1	Page 7, line 8 to page 9, line 3
said bus system being arranged to operate according to a protocol in which said first station repeatedly sends requests for data to said second station, said protocol comprising a first mode for transferring said requests in a first request format at a first communication speed and at least a second mode for transferring said requests in a second request format at a second speed,		BACKGROUND, page 2, line 29 to page 3, line 31
said second station being arranged to receive requests in a mode selected from a group of modes comprising		BACKGROUND, page 2, line 29 to page 3, line 31, esp. page 7, lines 15-21

said first and second modes, and being arranged to give a first indication to said first station if it is being arranged to operate according to said first mode and a second indication if it is being arranged to operate according to said second mode,		
characterized in that said first station comprises a processor, a controller and a translator, said processor being operable to generate request properties for requests in said first request format,	Fig. 1: 105, 106 and 107; Fig. 4, 402 and 406	Page 7, line 8 to page 9, line 3, esp. page 8, lines 1-20; Page 11, line 16 to page 12, line 23, esp. page 11, lines 22-28
said controller being operable to generate said requests in said first request format from said request properties, further being operable to transmit said request in said first format to said second station upon detection of said first indication and to forward said request to said translator upon detection of said second indication,	Fig. 4, 402 and 406	Page 11, line 16 to page 12, line 23, esp. page 11, line 29 to page 12, line 6.
and said translator being operable to transmit said request in said second format to said second station.	Fig. 4, 402 and 406	Page 11, line 16 to page 12, line 23, esp. page 12, lines 6-23.

VI. GROUNDS of REJECTION to be REVIEWED ON APPEAL

The issues in the present matter are whether:

1. claims 1-3, 5-10, 12-17 and 19-21 are anticipated under 35 USC 102(e) by Chang.

2. claims 4, 11, and 18 are unpatentable under 35 USC 103(a) over Chang in view of EHCI specification.

VII. ARGUMENT

I. Rejection of claims 1-3, 5-10, 12-17 and 19-21 as anticipated under 35 USC 102(e) by Chang

At the outset, it should be noted that Chang exemplifies the kind of "two-engine" system that the present invention aims to avoid. Note in Fig. 5 of Chang the Open Host Controller Interface/Universal Host Controller Interface (OHCI/UHCI) on the one hand and the Enhanced Host Controller Interface (EHCI) on the other hand.

More importantly, there is no suggestion in Chang that the "translator," identified in the final rejection as Root Hub--Shadowed Hub and Port Registers 132, performs translation of any kind. The clearest description of the functions performed by the root hub 132 occurs in the sentence bridging columns 3 and 4 of Chang: "Examples of such functions include port connection/disconnection detection, port enable/disable control, port reset control, port suspend/resume control, port power on/off control, port over-current detection, the monitoring of statuses, and the control of states." There is no mention or suggestion of anything concerning translation. The only question therefore is whether the language of the claims themselves requires the "translator" to perform some sort of translation.

In fact, the claims language does explicitly require that the translator perform translation. With reference to claim 15, for example, the translator has transmitted to it requests in the first format and transmits requests in the second format to the connection. Claims 8 and 1 contain substantially similar language. This receipt of requests in the first format and transmission of requests in the second format is the translation performed by the "translator."

Applicant finds no description of corresponding functions in Chang. Accordingly, Chang cannot be said to anticipate the inventions recited in claims 15, 8 and 1.

With regard to dependent claims 2, 3, 5-7, 9, 10, 12-14, 16, 17, 19 and 21, these claims depend from their respective independent claims, which have been shown to be patently distinguishable over the cited reference. Accordingly, these claims are also patently distinguishable and allowable over the cited references by virtue of their dependency upon an allowable base claims. Of these, however, claims 21, 14 and 7 bear particular mention. Claim 7, for example, recites "a router for routing said responses received at said connection to said translator and to said controller, whereby said router is operable to route said responses to said controller upon detection of said first indication and to to said translator upon detection of said second indication."

In regard to this claim, the final rejection states: "Chang et al. disclose in that said first station also comprises a router 160 for routing said responses received at said connection to said translator and to said controller, whereby said router is operable to route said responses to said controller upon detection of said first indication and to to said translator upon detection of said second indication (see figure 5, col. 4, lines 15-36)." The relevant portion of this citation simply states: "The external root hub 132 and the ports 150, 152 are in turn coupled to a port routing logic 160 that functions to dtermine whether data (communications) should be routed from the SMI (USB 1.1) or UTMI (USB 2.0) interfaces." In other words, the routing decision is between OHCI/UHCI 104 and EHCI 150, not between either of these and the root hub ("translator") 132. Again, the logic of the rejection may be seen to not withstand scrutiny.

II. Rejection of claims 4, 11, and 18 as unpatentable under 35 USC 103(a) over Chang in view of EHCI specification

With regard to dependent claims 4, 11 and 18, these claims depend from independent claim 1, which has been shown to be patently distinguishable over the cited reference. Accordingly, these claims are also patently distinguishable and allowable over the cited references by virtue of their dependency upon an allowable base claims.

In view of the above, applicant submits that all of the above referred-to claims are patentable over the teachings of the cited references.

VIII. CONCLUSION

In view of the above analysis, it is respectfully submitted that the referenced teachings, whether taken individually or in combination, fail to anticipate or render obvious the subject matter of any of the present claims. Therefore, reversal of all outstanding grounds of rejection is respectfully solicited.

Date: 05/17/2007

By: Michael Ure
Attorney for Applicant
Registration No. 33,089

IX. APPENDIX: THE CLAIMS ON APPEAL

1. A bus system comprising a first station and a second station coupled by a bus for transferring signals, said bus being arranged to operate according to a protocol in which said first station repeatedly sends requests for data to said second station, said protocol comprising a first mode for transferring said requests in a first request format at a first communication speed and at least a second mode for transferring said requests in a second request format at a second speed, said second station being arranged to receive requests in a mode selected from a group of modes comprising said first and second modes, and being arranged to give a first indication to said first station if it is being arranged to operate according to said first mode and a second indication if it is being arranged to operate according to said second mode, characterized in that said first station comprises a processor, a controller, and a translator, said processor being operable to generate request properties for requests in said first request format, said controller being operable to generate said requests in said first request format from said request properties, further being operable to transmit said request in said first format to said second station upon detection of said first indication and to forward said request to said translator upon detection of said second indication, and said translator being operable to transmit said request in said second format to said second station.

2. A bus system according to claim 1, wherein said bus system is a USB system.

3. A bus system according to claim 1, wherein said request properties comprise mode

information whereby said controller is operable to determine from said mode information if said request is to be transmitted in said first or second format, respectively.

4. A bus system according to claim 1, wherein said second station is assigned an address, said request properties comprise address information whereby said controller is operable to determine from said address information if said request is to be transmitted in said first or second format, respectively.

5. A bus system according to claim 1, characterized in that said first station also comprises a router for routing said requests transmitted in said first and second modes by said controller and said translator, respectively, to said bus.

6. A bus system according to claim 1, characterized in that said first mode is also conceived for transferring responses in a first response format at said first communication speed and said second mode is also conceived for transferring said responses in a second response format at said second speed, said second station is operable to transmit responses to said first station in a mode selected from a group of modes comprising said first and second modes, said translator is operable to receive said responses in said second response format and to forward said responses to said controller, said controller is operable to receive said responses in said first response format and to generate response properties from said responses in said first response format, and said processor is operable to handle said response properties generated by said controller.

7. A bus system according to claim 6, characterized in that said first station also comprises a router for routing said responses transmitted by said second station to said translator and to said controller, whereby said router is operable to route said responses to said controller upon detection of said first indication and to said translator upon detection of said second indication.

8. A station for use in a bus system comprising a connection for a bus, said station being arranged to operate according to a protocol in which said station repeatedly sends requests to said connection, said protocol comprising a first mode for transferring said requests in a first request format at a first communication speed and at least a second mode for transferring said requests in a second request format at a second speed, characterized in that said station comprises a processor, a controller, and a translator, said translator being operable to generate request properties for requests in said first request format, said controller being operable to generate said requests in said first request format from said request properties, further being operable to transmit said request in said first format to said connection and to forward said request to said translator, and said translator being operable to transmit said requests in said second format to said connection.

9. A station according to claim 8, wherein said station is a USB host.

10. A station according to claim 8, wherein said request properties comprise mode information whereby said controller is operable to determine from said mode information

if said request is to be transmitted in said first or second format, respectively.

11. A station according to claim 8, wherein said request properties comprise address information whereby said controller is operable to determine from said address information if said request is to be transmitted in said first or second format, respectively.

12. A station according to claim 8, characterized in that said station also comprises a router for routing said requests transmitted in said first and second modes by said controller and said translator, respectively, to said connection.

13. A station according to claim 8, characterized in that said first mode is also conceived for transferring responses in a first response format at said first communication speed and said second mode is also conceived for transferring said responses in a second response format at said second speed, said translator is operable to receive said responses in said second response format from said connection and to forward said responses to said controller in said first format, said controller is operable to receive said responses in said first response format from said connection and to generate response properties from said responses in said first response format, and said processor is operable to handle said response properties generated by said controller.

14. A station according to claim 13, characterized in that said station also comprises a router for routing said responses received at said connection to said translator and to said controller, whereby said router is operable to route said responses to said controller if

said responses are received in said first format and to said translator if said responses are received in said second format.

15. A bus interface for use in a bus system comprising a connection for a bus and an input for receiving request properties from a processor, said bus interface being arranged to operate according to a protocol in which said bus interface repeatedly sends requests to said connection, said protocol comprising a first mode for transferring said requests in a first request format at a first communication speed and at least a second mode for transferring said requests in a second request format at a second speed, characterized in that said bus interface comprises a controller and a translator, whereby said input is operable to receive request properties for requests in said first request format, said controller being operable to generate said requests in said first request format from said request properties, further being operable to transmit said requests in said,first format to said connection and to forward said requests to said translator, and said translator being operable to transmit said requests in said second format to said connection.

16. A bus interface according to claim 15, wherein said bus interface is a bus interface for a USB host.

17. A bus interface according to claim 15, wherein said request properties comprise mode information whereby said controller is operable to determine from said mode information if said requests are to be transmitted in said first or second format, respectively.

18. A bus interface according to claim 17, wherein said request properties comprise address information, whereby said controller is operable to determine from said address information if said requests are to be transmitted in said first or second format, respectively.

19. A bus interface according to claim 15, characterized in that said bus interface also comprises a router for routing said requests transmitted in said first and second modes by said controller and said translator, respectively, to said connection.

20. A bus interface according to claim 15, characterized in that said first mode is also conceived for transferring responses in a first response format at said first communication speed and said second mode is also conceived for transferring said responses in a second response format at said second speed, said translator is operable to receive said responses in said second response format from said connection and to forward said responses to said controller in said first format, said controller is operable to receive said responses in said first response format from said connection and to generate response properties from said responses in said first response format, and said bus interface comprises an output for transmitting said request properties to said processor.

21. A bus interface according to claim 20, characterized in that said station also comprises a router for routing said responses received at said connection to said translator and to said controller, whereby said router is operable to route said responses to said

controller if said responses are received in said first format and to said translator if said responses are received in said second format.

X. APPENDIX: RELATED PROCEEDINGS

NONE

XI. APPENDIX: EVIDENCE

NONE